

CLAIMS:

1. A transmitter which carries out communication with a receiver by establishing connection of their plurality of communication layers,

the transmitter comprising:

connection request generating means for generating a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers; and

connection request transmitting means for transmitting the connection request to the receiver.

2. The transmitter as set forth in claim 1, wherein:

the connection request generating means includes in the connection request a command for requesting the receiver to transmit a response with respect to the connection request.

3. The transmitter as set forth in claim 1, further comprising:

connection setting means for carrying out setting for each of the plurality of communication layers according to the response, which is received from the receiver as a

response to the connection request.

4. The transmitter as set forth in claim 1, further comprising:

connection setting means for carrying out setting for each of the plurality of communication layers, according to the connection request, without receiving the response from the receiver.

5. The transmitter as set forth in claim 1, wherein:

the connection request generating means includes in the connection request a command for requesting the receiver to transmit a response during data exchange.

6. A transmitter which carries out communication with a receiver by establishing connection of their plurality of communication layers,

the transmitter comprising:

disconnection request generating means for generating a disconnection request containing a command and data required for disconnecting a number of contiguously adjacent layers among the plurality of communication layers; and

disconnection request transmitting means for

transmitting the disconnection request to the receiver.

7. A transmitter which carries out communication with a receiver by establishing connection of their plurality of communication layers,

the transmitter comprising:

first connection request generating means for generating a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers;

second connection request generating means for generating a connection request containing a command and data required for connection of one of the plurality of communication layers;

selecting means for selecting either of the first connecting means and the second connecting means so as to generate the connection request; and

connection request transmitting means for transmitting to the receiver the connection request generated by the first or second connection request generating means selected by the selecting means.

8. The transmitter as set forth in claim 1, wherein:

the communication is performed by infrared communication.

9. The transmitter as set forth in claim 1, wherein:

the transmitter is a mobile phone.

10. The transmitter as set forth in claim 1, wherein:

the transmitter is an image-capturing device which transmits a captured-image to the receiver.

11. A communication program for operating the transmitter as set forth in claim 1, the communication program causing a computer to function as the respective means of the transmitter.

12. A communication method for a transmitter which carries out communication with a receiver by establishing connection of their plurality of communication layers,

the communication method comprising the steps of:

generating, by connection request generating means, a connection request containing a command and data required for connecting a number of contiguously adjacent

layers among the plurality of communication layers; and  
transmitting, by connection request transmitting means, the connection request to the receiver.

13. A receiver which carries out communication with a transmitter by establishing connection of their plurality of communication layers,

the receiver comprising:

connection request receiving means for receiving a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers; and

connection establishing means for extracting the command and data from the connection request, and establishing connection for the plurality of communication layers based on the command and data.

14. The receiver as set forth in claim 13, further comprising:

response transmitting means for transmitting a response in a case where the connection request contains a command for requesting transmission of response to the connection request.

15. The receiver as set forth in claim 13, further

comprising:

response transmitting means for transmitting a response in a case where the connection request contains a command for requesting transmission of response during data exchange.

16. A receiver which carries out communication with a transmitter by establishing connection of their plurality of communication layers,

the receiver comprising:

disconnection request receiving means for receiving a disconnection request containing a command and data required for disconnecting a number of contiguously adjacent layers among the plurality of communication layers; and

disconnecting means for extracting the command and data from the disconnection request, and carrying out disconnection for the plurality of communication layers based on the command and data.

17. A receiver which carries out communication with a transmitter by establishing connection of their plurality of communication layers,

the receiver comprising:

connection request receiving means for receiving

either a connection request containing a command and data which is required for connecting a number of contiguously adjacent layers among the plurality of communication layers, or a connection request containing a command and data required for establishing connection of one of the plurality of communication layers; and

connection establishing means for extracting the command and data from the connection request, and establishing connection for the plurality of communication layers based on the command and data.

18. The transmitter as set forth in claim 13, wherein:

the communication is performed by infrared communication.

19. The receiver as set forth in claim 13, wherein:  
the receiver is a broadcast receiving device which receives broadcast from the transmitter.

20. The receiver as set forth in claim 13, wherein:  
the receiver is a broadcast recording device which records broadcast received from the transmitter.

21. A communication program for operating the

receiver as set forth in claim 13, the communication program causing a computer to function as the respective means of the receiver.

22. A communication method for a receiver which carries out communication with a transmitter by establishing connection of their plurality of communication layers,

the communication method comprising the steps of:

receiving, by connection request receiving means, a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers; and

extracting, by connection establishing means, the command and data from the connection request, and establishing connection for the plurality of communication layers based on the command and data.

23. A communication system includes a transmitter and a receiver which carry out communication by establishing connection of their plurality of communication layers,

the transmitter comprising:

connection request generating means for generating a connection request containing a command and data



required for connecting a number of contiguously adjacent layers among the plurality of communication layers; and

connection request transmitting means for transmitting the connection request to the receiver,  
the receiver comprising:

connection request receiving means for receiving a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers; and

connection establishing means for extracting the command and data from the connection request, and establishing connection for the plurality of communication layers based on the command and data.